WHAT IS CLAIMED IS:

1. A rotor of a rotary electric machine, the rotor comprising:

a center shaft rotatably supported in a housing of the rotary electric machine;

a cylindrical armature core fixed to the center shaft, the armature core having a plurality of slots formed therein;

a plurality of inner conductor segments, each having an in-slot portion disposed in an inner portion of the slot, a rear end portion disposed at a rear side of the armature core, and a front end portion disposed at a front side of the armature core;

a plurality of outer conductor segments, each having an in-slot portion disposed in an outer portion of the slot, a rear end portion disposed at a rear side of the armature core, and a front end portion disposed at a front side of the armature core, wherein:

an armature coil is formed by electrically connecting the inner conductor segments and the outer conductor segments in a predetermined manner; and

at least the rear end portion of the outer conductor segment extends in a direction substantially perpendicular to an axial direction of the center shaft and is formed so that a thickness thereof in the axial direction gradually increases along the direction in which it extends, thereby making a cross-sectional area of the

rear end portion substantially uniform throughout its entire length.

2. The rotor of a rotary electric machine as in claim 1, wherein:

the rear end portions of the outer conductor segments form a commutator surface with which brushes disposed movably in the axial direction make sliding contact; and

the commutator surface is slanted relative to a plane perpendicular to the axial direction.

3. The rotor of a rotary electric machine as in claim 1, wherein:

the rear end portions of the outer conductor segments form a commutator surface with which brushes disposed movably in the axial direction make sliding contact; and

an insulator plate having a thickness compensating the gradually increasing thickness of the rear end portion of the outer conductor segment is interposed between the rear end portion of the inner conductor segment and the rear end portion of the outer conductor segment, so that the commutator surface becomes substantially perpendicular to the axial direction.

4. The rotor of a rotary electric machine as in claim 1, wherein:

the outer conductor segment is formed from a conductor wire having a rectangular cross-section; and

the rear end portion is bent from the in-slot portion at a thin portion formed between the in-slot portion and the rear end portion.

5. The rotor of a rotary electric machine as in claim 1, wherein:

a plurality of through-holes extending in the axial direction for forming air passages are formed in the armature core, the through-holes being positioned at a radial inside of portions electrically connecting the inner conductor segments and the outer conductor segments.

6. The rotor of a rotary electric machine as in claim 1, wherein:

the rear end portion of the inner conductor segment includes a projected portion extending in the axial direction; and

a tip of the rear end portion of the outer conductor segment is electrically connected to a side of the projected portion.

7. The rotor of a rotary electric machine as in claim 1, wherein:

the rear end portion of the inner conductor segment is electrically connected to the rear end portion of the outer conductor segment at respective tips thereof, forming a rear connecting portion, and the front end portion of the inner conductor segment is electrically connected to the front end portion of the outer conductor segment at respective tips thereof, forming a front connecting portion; and

the rear connecting portion and the front connecting portion are positioned at an equal radial distance from the center shaft.